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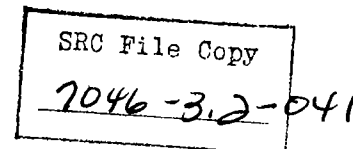
EMAIL OF TRANSMITTAL AND U S NAVY RESPONSES TO REGULATOR COMMENTS ON
DRAFT SUPPLEMENTAL RESOURCE CONSERVATION AND RECOVERY ACT FACILITY
INVESTIGATION AND REMEDIAL INVESTIGATION FOR EIGHT SITES NAS KEY WEST FL

11/3/1997

BROWN AND ROOT ENVIRONMENTAL

Chuck Bryan

From: Chuck Bryan
Sent: Monday, November 03, 1997 7:58 PM
To: 'BERRY.MARTHA'; 'Jorge Caspary TAL 904/488-0190'; 'Phillip Williams'; 'J Dudley Patrick'; 'Eric Nuzie'; 'Pete Paznokas'; 'Roy Hoekstra'
Cc: Regina Dixon; Scott Flickinger; Michael Whitten
Subject: Responses to Comments on the 8-Site Report



Howdy Partners,

One of my Partnering Team action items is to respond to EPA and FDEP comments on the 8-Site report. The responses to EPA comments (file name EPA-D.DOC) and FDEP comments (file name FDEP-D.DOC) are attached to this email. I do not recall if we set up a schedule for comment resolution. I suggest that we discuss any responses that you want in one or more conference calls before our next meeting, or during our next meeting in Atlanta, Georgia on 2-3 December 1997.

For your (all y'all's) information, the prices quoted to my travel people for both lodges in Stone Mountain Park were well above (perhaps "way above" is more accurate) the maximum rates allowed by government regulations. Martha has graciously offered to find meeting room accommodations within one of the federal buildings in downtown Atlanta. Since I was originally tasked with setting up lodging arrangements at the park, I assume that you all want me to make lodging arrangements in downtown Atlanta. I will make the reservations, but you (of course) will have to pay for your rooms. I will try the Suite Hotel or the Omni first, as these are the two places that I have previously stayed. Both are close (walking distance) to five-points and Martha's office building. Please let me know if you will not be able to attend the meeting, or if you find my proposed arrangements unacceptable.

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Epa-d



Fdep-d

c: Ron Demes, NAS Key West

Q A Record

**DRAFT SUPPLEMENTAL RCRA FACILITY INVESTIGATION AND REMEDIAL
INVESTIGATION REPORT FOR
NAVAL AIR STATION (NAS) KEY WEST EIGHT SITES**

**RESPONSE TO COMMENTS FROM
MARTHA BERRY, U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION IV**

GENERAL COMMENTS

Comment 1:

Significant amounts of fill material appear to be associated with almost all of the building structures and improved parking areas. Some of the unusual patterns/trends in the contaminant level data, which lead to the conclusion that the identified contaminants are not site related, could in fact be related to the fill material. The text does not provide adequate detail on the surface and subsurface soil conditions to indicate if unexplained elevated contaminant levels could be associated with the fill materials in these areas. A general review of the historic and typical practices for obtaining and using fill material should be provided in the text.

Response: The Supplemental RFI/RI Report states that fill material is present at SWMU 4 and SWMU 7. Since IR sites 1, 7, and 8 are former landfills, structures and parking areas at those sites may also have been constructed atop fill material. According to the NAS Key West Public Works Department, all fill material on the base originated from one or more of the following sources: Boca Chica Channel, Key West Harbor, or Flagler Railroad. The text describing SWMUs 4 and 7 (Sections 2.1 and 4.1, respectively) will be amended to state that fill material was imported from these locations. Additional details regarding typical practices for obtaining and using fill material are not available. However, the absence of these details does not substantially impact the report.

Q A Record

Comment 2:

It is stated in chapters 2, 5, 7, 8 and 9 that inorganic contamination detected in groundwater samples collected during the 1996 investigation was greatly reduced compared to inorganic contamination detected in previous investigations. From this text, it can be inferred that sampling methods used in prior investigations may have had an impact on the level of sample turbidity and on inorganic analysis results (e.g., samples with higher turbidity can result in higher inorganic concentration results). If this inference is correct, then the previous groundwater sample collection techniques, including methods for purging the monitoring wells, should be included as an explanation for the differences in detected inorganic contamination.

Response: No definitive explanation is possible. However, several potential explanations exist for the elevated metal concentrations detected in groundwater during previous investigations. Sample collection logs were not available for the 1986 Geraghty and Miller data, but sample collection logs from IT's 1990 and 1993 investigations consistently described the groundwater samples as "milky", "cloudy", "brownish", "grayish", or as containing suspended sediment. These descriptions are indicative of high turbidity which can artificially elevate metals data in samples undergoing analysis using inductively coupled plasma (ICP). ICP was used to evaluate at least a portion of the metals in both 1991 and 1993. During the 1996 Supplemental RFI/RI, low-flow groundwater sampling techniques were employed and turbidity values of 0 (clear) were routinely achieved. Although turbidity interferences are certainly a possible explanation for the elevated metal concentrations detected during previous investigations, it is possible that the previous investigations accurately depicted metals concentrations in the groundwater at the time of the investigation. The lower concentrations documented in Supplemental RFI/RI might simply reflect groundwater movement, metals becoming bound in soil, or interim remedial actions (where applicable).

Comment 3:

Shellfish tissues were collected at several of the eight sites, but neither recreational nor subsistence fisherman scenarios were evaluated at any of the sites. It seems reasonable that the types of shellfish sampled may be actively pursued and consumed by local fisherman. These potential exposure pathways should be evaluated at the applicable sites.

Response: The Workplan (ABB, 1995) contained no procedures for the evaluation of shellfish ingestion. However, as explained in Section 3.2.4.3.5 of Appendix C, the shellfish ingestion exposure route was evaluated using adult resident receptors. This was accomplished at all sites where shellfish were collected. The species evaluated were those that are consumed by humans, and consisted of lobsters at IRs 1, 7, and 8; stone crabs at IRs 7 and 8, and blue crabs at AOC B. Other shellfish species collected were not evaluated in the human health risk assessment because they are not normally consumed by humans. These consisted of spiny spider crabs, hermit crabs, mud crabs, milk conchs, Caribbean vase conchs, and true tulip snails. The results of these evaluations are included in the applicable human health risk assessment sections of the RFI/RI Report.

The evaluation of shellfish ingestion by adult residents is expected to adequately assess the shellfish ingestion scenario. The potential risks for a recreational fisherman scenario would be expected to be less than the adult resident scenario and the potential risks for a subsistence fisherman scenario would be expected to be greater than the adult resident scenario. However, since there is great uncertainty associated with all three of these scenarios regarding the ingestion rate of shellfish per day, the adult residential scenario provides the most practical ingestion rates.

Comment 4:

The Lower Keys marsh rabbit, cotton rat, raccoon, American kestrel, and great blue heron were chosen as ecological receptors for all eight sites at Naval Air Station Key West, regardless of the nature and extent of contamination or the habitat at the sites. These receptors are not sufficient for some sites, and as a result, ecological risk was not adequately assessed. For example, the nature and extent of contamination at Area of Concern (AOC) B is primarily aquatic. Concentrations of metals in the sediment and surface water, such as iron and zinc, exceeded sediment and surface water ecological thresholds. Although these contaminants may not pose a risk to the five chosen ecological receptors, they may pose a risk to the aquatic community. Similar scenarios occur at sites with terrestrial habitats. As a result, aquatic organisms and passerine birds should be included as ecological receptors in the risk assessment, where appropriate.

Response: Section 3.3.2.1.2 of Appendix C lists the receptors chosen for foodchain modeling at each site, and the reasons for their use in the model. The ecological receptors chosen for the foodchain modeling were selected to be most representative of groups of receptors (guilds) found in the Lower Keys, and more specifically, at each site. The foodchain modeling was not intended to be an exhaustive analysis of all ecological receptors potentially found at each site. Furthermore, the selection of representative receptors was approved by Region 4 EPA. Aquatic organisms were not selected as representative species in the foodchain modeling since water and sediment screening was performed to investigate risks to aquatic organisms. That is, the surface water and sediment screening thresholds are based on risks to aquatic organisms. Thus, the Navy believes that the foodchain modeling currently presented in the report is sufficient to support the conclusions of the ecological risk assessment.

Comment 5:

Some less conservative ecological threshold values are used in the ecological risk assessment to screen for chemicals of potential concern (COPC) when more conservative threshold values are available. For example, the sediment threshold values of 261 µg/kg (Effects Range Low, Long et al. 1995, as stated in the document) and 1,600 µg/kg (Effects Range Median, Long et al. 1995, as stated in the document) for benzo(a)anthracene were chosen as sediment threshold values (Table C.3-20, page C-134) to screen for COPCs in the ecological risk assessment. More conservative sediment threshold values of 74.8 µg/kg and 693 µg/kg from the Florida Department of Environmental Protection (FDEP) are available (FDEP 1994). The most conservative ecological threshold values should be used in ecological risk assessments to ensure protection of ecological receptors. The current ecological threshold values used in this document should be replaced with the more conservative threshold values, if available, and the ecological risk assessment should be revised to reflect these changes.

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Response: The Navy concurs that the most conservative thresholds should be used in the ecological risk assessments to ensure protection of ecological receptors. Therefore, all values in Appendix C, Table C.3-20 have been rechecked, resulting in revisions to ecological thresholds for the sediment analytes shown below:

Analyte	Benchmark Value (µg/kg)	Source
4,4'-DDD	1.22/7.81	Florida Sediment Quality Guideline (FDEP, 1995)
4,4'-DDE	2.07/27	Florida Sediment Quality Guideline (FDEP, 1995)/ER-M (Long et al., 1995)
4,4'-DDT	1.19/4.77	Florida Sediment Quality Guideline (FDEP, 1994)
Endosulfan I	2.9	EPA Sediment Quality Benchmark (EPA, 1996)
Endosulfan II	14	EPA Sediment Quality Benchmark (EPA, 1996)
Acenaphthene	6.71/500	Florida Sediment Quality Guideline (FDEP, 1994) /ER-M (Long et al., 1995)
Benzo(a)anthracene	74.8/1,600	Florida Sediment Quality Guideline (FDEP, 1994)/ER-M (Long et al., 1995)
Bis(2-Ethylhexyl)phthalate	182/2,647	Florida Sediment Quality Guideline (FDEP, 1994)
Chrysene	108/2,800	Florida Sediment Quality Guideline (FDEP, 1994)/ER-M (Long et al., 1995)

The benchmark values (also known as threshold values) shown above will be used to revise Table C.3-20. An explanation of how the values in Table C.3-20 were used in the risk assessment follows:

Sediment thresholds are typically designed to represent contaminant concentrations in sediments that are indicative of a very low level of risk and subsequently are inherently conservative. For example, an ER-L screening level is defined as the concentration below which adverse ecological "effects would rarely be observed", while the ER-M is the point below which adverse effects "would occasionally occur" (Long et al., 1995). Therefore, ascribing risk to a sediment contaminant detected in a concentration that exceeds the ER-L but is below the ER-M can be misleading. Thus, when analyte concentrations exceeded the most conservative thresholds available, concentrations were also compared to less conservative thresholds (when available), to obtain a risk range. For this reason, some analytes in Table C.3-20 are shown with two benchmark values. The "less conservative" thresholds for these analytes consisted primarily of probable effects levels (PELs) from Florida Sediment Quality Guidelines (FDEP, 1994) and effects range medians (ER-Ms) from Long et al. (1995). The choice of which value to use as the "less conservative" threshold was made on a case by case basis, depending on the extent and dependability of the data used to derive the value, and was not always the lesser of the PEL and ER-M value. However, it is important to note that all hazard quotients (HQs) calculated in the risk assessments, and all decisions regarding whether analytes were retained as COPCs, were based *only* on the most conservative threshold values available.

In summary, Table C.3-20 will be revised to reflect the changes noted in the table above. The sediment COPC tables and text will be revised as necessary to reflect the revisions. These revisions will not affect the foodchain modeling.

Comment 6:

It is stated in the text of the "Ecological Effects Characterization" sections for each site that contaminant intake dose models, estimated doses, and toxicity reference values (TRV) for each ecological receptor are provided in Appendix B, Part 4. This is incorrect. Only example dose calculations for representative receptors using analytical data from solid waste management unit (SWMU) 4 are presented in Appendix B, Part 4. These calculations should be included for each site. Without these calculations, risk estimates cannot be verified for the remaining sites.

Response: Printouts of all foodchain model spreadsheet results for all receptors would require three or more volumes of text (comprising hundreds of pages) and would be largely esoteric and of little value to the reader and the report as a whole. As a result, only dose calculations for SWMU 4 foodchain calculations were provided in Appendix B, Part 4. This site was chosen as an example because it was a site for which all five representative receptors were used in the foodchain modeling. The text of the Supplemental RFI/RI will be revised to state that *example* doses and TRVs are presented in Appendix B, Part 4.

Comment 7:

Conceptual site models do not include aquatic plant uptake and ingestion of aquatic plants for the sediment exposure scenario or ingestion of prey for the surface water exposure scenario, although these exposures were assessed in the risk assessment. These exposure scenarios should be included in the conceptual site models.

In addition, ingestion of prey is included in the plant exposure scenario in the conceptual site modes. This exposure seems unlikely and ingestion of prey should be omitted from the plant exposure scenario in the conceptual site mode.

Response Para. 1: Concur. Aquatic plants will be added to the conceptual models, showing the aquatic plant uptake and ingestion of aquatic plant exposure pathways. The ingestion exposure pathway in the surface water scenario was meant to include ingestion of prey as well as ingestion of surface water. This will be clarified.

Response Para. 2: All figures showing conceptual models indicate that ingestion of prey was *not* included for terrestrial plants.

Comment 8:

Brief descriptions of each COPC at NAS Key West are provided in Appendix B, Part 3. These descriptions are used in the ecological effects characterization for each of the eight sites within NAS Key

West. Although some COPC descriptions include the information necessary to characterize ecological effects, some do not. Ecological effects characterization should include an evaluation of effects data relevant to the stressor and should encompass all ecosystems found at NAS Key West. Fate in the environment, site-specific conditions, and chemical structure-activity relationships should be included when characterizing stressors. Sublethal effects and modes of toxicity should be presented for all types of ecological receptors found at NAS Key West.

Response: A discussion of site-specific conditions, environmental fate, and modes of toxicity for COPCs were discussed in the “discussion” sections of each ERA where applicable for specific COPCs. Information regarding each COPC was included in the toxicity profiles (App. B, part 3) instead of in ecological effects section, so that the reader would not be burdened with pages of toxicity information in the report sections. In addition, the toxicity profiles were intended to provide the reader with a general description of the toxicity of each COPC. The profiles were not meant to be exhaustive, comprehensive compendia of all available toxicity information.

Comments 9:

Bioaccumulation/bioconcentration factors (BAF/BCF) and soil-to-plant biotransfer factors were not provided for food chain modeling calculations. For example, models were used to predict contaminant concentration in kestrel prey from soil and plant contaminant concentrations. Values such as predicted contaminant concentrations from intake of meat were provided, but BAFs used to model these concentrations were not. All parameters used in the food chain models for all ecological receptors should be presented in the risk assessment.

Response: The pages in the foodchain model spreadsheets containing the requested data will be added, where applicable.

Comment 10:

It is not clear in the text whether concentrations of metals in surface water are measured as total or as dissolved. The method used to analyze surface water metal concentrations should be provided.

Response: Concur. Neither surface-water nor groundwater was filtered in the field prior to sample collection and analysis. Therefore, aqueous samples undergoing metals analysis were analyzed for total metals. This distinction will be made in Section 1.1.2 (Surface-Water and Sediment Sampling) and Section 1.3.4 (Groundwater Sampling) in Appendix C (Investigation Procedures).

Comment 11:

Page numbers are not provided for pages in Appendix B, Part 4 or Appendix G. Page numbers should be provided on all pages in the document.

Response: Appendix G and Part 4 of Appendix B are copies of field forms and computer printouts, respectively. These are not conducive to pagination, and providing page numbers would add little value to the report. The Navy does not consider the expense associated with numbering the pages of these appendices to be an effective use of its limited resources

SPECIFIC COMMENTS

Comment 1:

Executive Summary, Table ES-1, Summary of Conclusions, Page ES-4. *This table summarizes the human health and ecological risk assessment conclusions. The table identifies potential ecological risk for SWMU 7, installation restoration (IR) 1, and IR 8. A brief description of the potential ecological risk should be included for each of these sites in the table.*

Response: Concur. The table will be revised to include a brief description of ecological receptors potentially at risk.

Comment 2:

Chapter 2, Page 2-3, Section 2.2.1, Paragraph 2. *The text states "Characterization of releases at the site indicated that contaminants exceeding regulatory standards did not appear to be the result of onsite waste disposal operations (IT corporation, 1994)." Information on the affected media and the contaminant concentrations should be provided to support this statement.*

Response: The statement attributed to the IT (1994) study was included in the "Investigation History" section of the Supplemental RFI/RI simply as background information on the conclusions that were made in the 1994 report; it was not meant to provide detailed information on the IT (1994) RFI/RI. Data from the IT (1994) report were incorporated into the data set for the Supplemental RFI/RI, such that affected media and contaminant concentrations are integrated into the current report regardless of whether the statement in question was or was not defensible.

Comment 3:

Chapter 2, Page 2-21, Figure 2-6. *Figure 2-6 details the subsurface soil chemical concentrations for Solid Waste Management Unit 4 (SWMU 4). Sample location S4SB-2 is identified as being collected at*

0.5 feet; however, this sample should be designated as a surface soil sample. This discrepancy should be revised.

Response: Concur. The sample in question will be removed from the subsurface soil data set and added to the surface soil data set. The text and applicable tables in Chapter 2 will be revised. The data set shows that no other samples were collected at this particular depth.

Comment 4:

Chapter 2, Section 2.6.2.2, Page 2-66, Paragraph 2. *The text states that dibromomethane was selected as a COPC and that the compound has an “available quantitative toxicity value.” However, the listing of COPCs on Page 2-61 indicates that dibromomethane does not have a quantitative toxicity value. This discrepancy should be corrected.*

Response: Concur. The text will be revised.

Comment 5:

Section 2.7.2, Page 2-97, Paragraph 1. *The text states that the raccoon was not selected as a representative mammalian carnivore in the food chain modeling at SWMU 4 because COPCs did not include contaminants that biomagnify in the food chain, or were detected infrequently and at low concentrations. Organochlorine pesticides, such as dieldrin and heptachlor, were found in fish tissue at the site. Because crustaceans were not sampled for contamination, it should be conservatively assumed that crustacean tissue would also contain similar concentrations of pesticides as fish tissue. If raccoons are found at the site and ingest potentially contaminated prey, the raccoon should be included as a representative species in the food chain model.*

Response: Crustaceans, which comprise a large portion of the raccoon’s diet, are not common at SWMU 4, and fish constitute only a minuscule portion of the raccoon’s diet. More importantly, however, concentrations of contaminants that are known to bioaccumulate or biomagnify were low at this site, as mentioned in the text. The USEPA, in a conference call with the Navy, FDEP, and B & R Environmental on April 28, 1997, agreed that foodchain modeling using the raccoon as a representative species would be appropriate only at sites where bioaccumulation or biomagnification of chemicals of potential concern could possibly occur. Tables 2-26 through 2-29 of the RFI/RI show that organochlorine pesticides were not detected in groundwater, surface water, and sediment at the site. Three organochlorine pesticides were detected in site surface soil, but at concentrations well below ecological threshold values. Thus, analyses of abiotic media at the site indicate that the organochlorine pesticides detected in fish tissue were not related to site activities. This conclusion is also supported by the concentrations of these

pesticides in fish tissue, which were similar to concentrations in tissue from background locations. For these reasons, foodchain modeling using the raccoon as an ecological receptor is not necessary.

Comment 6:

Section 2.7.4.1.4, Pages 2-103 through 2-112. *This section discusses the food chain modeling for ecological receptors on site SWMU 4. The text previously states in Section 2.7.4.1.3 that 4,4'-dichlorodiphenyl dichloroethane (DDD), 4,4'-dichlorodiphenyl trichloroethane (DDT), gamma-benzene hexachloride (BHC), and endrin aldehyde were detected in red mangrove foliage collected from the edge of the marsh where Lower Keys marsh rabbit scat was observed. These contaminants were not included in the food chain modeling for the marsh rabbit or the cotton rat, even though both species are herbivores. Either the reason these contaminants were excluded should be explained or these contaminants should be included in the risk assessment.*

Response: As discussed in Section 3.3.2.1.2 of Appendix C (page C-150-151 of Rev. 1), lipophilic compounds, or water-insoluble compounds, are unlikely to appreciably accumulate in plants, based on the dynamics of plant uptake, distribution, metabolism, and elimination of organic contaminants. Therefore, food chain modeling of organic contaminants in soil was limited to plant hormone-like substances (e.g., 2,4-D; 2,4,5-T). This approach was approved by EPA Region IV (Wellman, 1997) and FDEP (Wolfe, 1997).

The Navy recognizes, however, that the scenario discussed in Section 3.3.2.1.2 of Appendix C, and the methods approved by Wellman (1997) and Wolfe (1997) were originally meant to refer to the modeling of *plant uptake of contaminants from soil*, while the reviewer's comment refers to contaminants *measured* (not modeled) in plants. While the reviewer points out that DDD, DDT, gamma-BHC, and endrin aldehyde were detected in plant samples from SWMU 4, Table 2-32 of the RFI/RI shows that these contaminants were present in plant samples at low concentrations that were less than or only slightly greater than in background plants. In addition, Tables 2-26 through 2-29 of the RFI/RI show that no organochlorine pesticides were detected in groundwater, surface water, or sediment at the site. DDT was detected in one surface soil sample, but at a concentration well below the ecological toxicity threshold value. Thus, these compounds were not COPCs in abiotic media at the site, and the data suggest that concentrations of these compounds in plant tissue were not related to site activities. For these reasons, the inclusion of plant concentrations of these four organic chemicals in food chain modeling would probably be of little value in the ecological risk assessment, and would contribute little to the decision-making process. Thus, the foodchain modeling should remain as currently presented in the RFI/RI report.

Comment 7:

Chapter 2, Section 2.8. *The conclusion should include a reference to the need for land use restrictions.*

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Response: SWMU 4 has been approved for No Further Action by the NAS Key West Partnering Team, which includes representatives from FDEP, EPA Region IV, NAS Key West, and Navy SOUTHDIV. Institutional controls were not considered necessary based on the low risks posed by the site.

Comment 8:

Chapter 3, Page 3-3, Section 3.2, General. *From Section 3.2.1, it can be inferred that an Interim Remedial Action (IRA) was conducted to reduce migration of contamination. However, the text does not mention what IRA activities were conducted or how these activities relate to the rationale for the current investigation. This discrepancy should be addressed.*

Response: Section 3.2.1 states that the IT (1994) RFI/RI recommended that an IRA be conducted. No IRA has been conducted at the site.

Comment 9:

Chapter 3, Page 3-17, Figure 3-6. *Surface and subsurface results should be reported on different figures.*

Response: Due to the number of samples and the quantity of detections above screening values, surface and subsurface soil chemical concentrations are usually shown on separate figures. Since relatively few soil samples were collected at SWMU 4 and detections above screening values were not widespread, this is not necessary for SWMU 4. Soil samples were collected from only four locations at SWMU 4. Soil from all four locations included a surface sample, while subsurface samples were also collected from three of the four locations. This is clearly explained in the notes on the figure, so that it is easy to discern whether indicated results refer to surface or subsurface samples. An understanding of the spatial extent of soil chemical concentrations would be diminished by showing the results on separate figures.

Comment 10:

Chapter 3, Section 3.6.7.1, Page 3-68, Paragraph 1. *The text states that "arsenic was chosen as a COC in soil." However, this paragraph describes the selection of COCs in sediment. The text should be amended accordingly.*

Response: Concur. The text will be revised to state that arsenic was chosen as a COC in sediment.

Comment 11:

Section 3.7.2, Page 3-89, Paragraph 2. *The text states that the raccoon was not selected as a representative mammalian carnivore in the food chain modeling at SWMU 5 because COPCs did not include contaminants that biomagnify in the food chain, or were detected infrequently and at low concentrations. Organochlorine pesticides, such as DDT and endosulfan sulfate, were found in fish tissue at the site. Because crustaceans were not sampled for contamination, it should be conservatively assumed that crustacean tissue would also contain similar concentrations of pesticides as fish tissue. If raccoons are found at the site and ingest potentially contaminated prey, the raccoon should be included as a representative species in the food chain model.*

Response: See response to Specific Comment 5. Tables 3-25 through 3-28 of the RFI/RI show that organochlorine pesticides were not detected in groundwater, surface water, sediment, and surface soil at the site. Thus, analyses of abiotic media at the site indicate that the organochlorine pesticides detected in fish tissue were not related to site activities. This conclusion is also supported by the concentrations of these pesticides in fish tissue, which were generally similar to concentrations in tissue from background locations. For these reasons, and the additional reasons discussed in the response to Specific Comment 5, foodchain modeling using the raccoon as an ecological receptor is not necessary.

Comment 12:

Section 3.7.4.1.4, Page 3-103, Paragraph 0. *The sentence at the end of the paragraph should be completed, or the word "discussion" should be deleted from the text.*

Response: Concur. The error will be corrected.

Comment 13:

Chapter 4, Page 4-1, Section 4.1. *This section states, "Sediment in the ditch is eroded from the limestone and fill material present at the site." Information should be included about the condition of the area from which the fill material was taken in order to clarify whether or not the contamination in the ditch is caused by chemicals found in the fill material.*

Response: See response to General Comment 1.

Comment 14:

Chapter 4, Page 4-13, Section 4.2.2.1. *This section outlines the reasons for collecting additional samples of all media, except subsurface soil, at SWMU 7. This section should be modified to include the reason for collecting additional subsurface soil samples in 1996.*

Response: Subsurface soil was not collected at SWMU 7 in 1996, and thus, the text does not need to be modified.

Comment 15:

Chapter 4, Page 4-13, Section 4.2.2.2, General. Subsections within this section discuss and list analytical parameters for surface soil, surface water, sediment and groundwater samples. Subsurface soil samples were analyzed in previous investigations, however, no discussion of subsurface soil analytical parameters is included in Chapter 4. Chapter 4 should be revised to include a discussion of the subsurface soil analytical parameters used.

Response: Subsurface soil sampling is not discussed in Section 4.2.2.2 because this section addresses the scope of *current* field investigations; the section is labeled to reflect this. Subsurface soil was collected and analyzed in previous investigations, and these analytical results are discussed in Section 4.4.1 (Nature and Extent of Contamination - Subsurface Soil).

Comment 16:

Chapter 4, Page 4-14, Section 4.2.2.2. This section states that neither surface water nor sediments related to SWMU 7 were previously sampled. However, Section 4.4.3 on Page 4-30 states that sediments were sampled during the 1993 IT Corporation RFI/RI. This discrepancy should be corrected.

Response: Concur. The text will be modified to state that (1) the two ponds and the southwestern ditch were not sampled in previous investigations; (2) Only the main ditch had been previously sampled: and (3) Only one sample was collected in 1996 from the main ditch.

Comment 17:

Chapter 4, Page 4-15, Section 4.3.1, Paragraph 2. This paragraph states that the direction of groundwater flow, as indicated on Figure 4-5, is toward the southwest. However, the groundwater flow direction depicted in Figure 4-5 is toward the southeast. This discrepancy should be corrected.

Response: Concur. The text will be revised to indicate that groundwater flow is toward the southeast.

Comment 18:

Section 4.3.1, Page 4-15 and Figure 4-5, Page 4-11. The direction of groundwater flow seems to be away from the pond. If there is an explanation, please reference it.

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Response: The direction of groundwater flow indicated in Figure 4-5 is based on groundwater levels measured during 1993 and 1996. Further explanation is unnecessary.

Comment 19:

Figure 4-6, Page 4-19. *Samples taken from 0-1' should be considered surface soil samples for the purposes of risk assessment.*

Response: As indicated in the footnote in Figure 4-6, the indicated depth represents the top of the sampling interval, so the samples in question were actually collected below 1 foot.

Comment 20:

Chapter 4, Section 4.4.3.2, Page 4-37, Paragraph 4. *The text states that:*

Endrin was selected as a COPC based on the fact that its hazard quotient was greater than one; however, endrin concentrations in sediment at SWMU 7 were less than twice the average background concentration which was selected for nature and extent screening.

It is not appropriate to screen organic compounds against a "two times background" value. Reference to screening endrin concentrations against a background-based screening value should be deleted.

Response: The statement in question is taken from a discussion of the nature and extent of contamination. It is important to note that (as mentioned in Section 3.1.4.1 of Appendix C), the nature and extent screening process was designed to be as conservative as both of the screening processes used in the human health and ecological risk assessments. Within Section 4.4.3.2 of the RFI/RI, the comparison of endrin concentrations in SWMU 7 sediments to background concentrations was meant only to provide an evaluation of the nature and extent of this somewhat ubiquitous pesticide. Comparisons of site contaminant concentrations to twice the average background concentration, however, were not conducted in either of the risk assessments. The Navy concurs that a comparison to twice the average background concentration (even in the nature and extent sections) is inappropriate for organics. Therefore, applicable sections of the text regarding the nature and extent of organic compounds will be revised so that comparisons will be made to the average background concentrations, rather than to twice the average background concentrations.

Comment 21:

Chapter 4, Section 4.6.2.2, Page 4-63, Paragraph 1. *The text states that "no quantitative values are listed for those chemicals identified with an asterisk (*); therefore, they will be evaluated quantitatively in*

Partnering Team Draft

the uncertainty section. However, a qualitative evaluation is presented in the uncertainty section. The discrepancy should be corrected.

Response: Concur. The term “quantitatively” will be changed to “qualitatively”.

Comment 22:

Table 4-26, Page 4-86. *There is a typo on this page.*

Response: Concur. The typographical error will be rectified.

Comment 23:

Section 4.7.1.1, Page 4-93, Paragraph 5. *“...a small pond” in the second sentence should be replaced with “two small ponds.”*

Response: Concur. The sentence will be revised.

Comment 24:

Section 4.7.1.1, Page 4-94, Paragraph 0 and Paragraph 1. *This section discusses the habitat types at site SWMU 7. Paragraph 0 states that surface water in the two ponds and ditch are not hydrologically connected to any other water bodies, and there are no other surface water resources at the site. However, the following paragraph states that water levels in the ponds and the ditch are probably maintained by other inputs and shallow groundwater. These statements contradict. If groundwater contributes to the water levels in the pond and ditch, it appears that the surface water in the ponds and ditch are hydrologically connected. This contradiction should be explained, or the statement in paragraph 0 should be deleted.*

Response: Concur. The wording will be changed to state that the two ponds and ditch are not connected to other areas via surface hydrology.

Comment 25:

Section 4.7.1.1, Page 4-96, Paragraph 2. *This paragraph discusses the use of habitat by ecological receptors at SWMU 7. The text states that water depth along the shoreline of the ponds of approximately 2 feet prevents foraging at the site by wading piscivorous birds. The basis for this reasoning is unclear. This statement should be justified by literature or this statement should be removed and the risk assessment should be revised to include the great blue heron or another piscivorous wading or diving bird as an ecological receptor at the site.*

Response: Concur. The text will be revised to more clearly describe the conditions at the shoreline of these small ponds. The banks of the ponds are vertical, so that water at the edge of the ponds is 2 feet deep. Most wading birds are less than 2 feet in total height. Even the largest wading birds (e.g., great blue heron, wood stork) do not have legs long enough to wade in water of this depth.

Comment 26:

Section 4.7.4.2, Page 4-116, Paragraph 3. *The text states that although the hazard quotient (HQ) of 130 for cyanide in sediments at SWMU 7 was indicative of high potential risk in one 1993 sediment sample, it was not detected in another 1993 sample. Cyanide was not detected in five 1996 samples because spike recoveries were below quality control limits. As a result, cyanide results can only be interpreted as inconclusive. Therefore, cyanide should remain as a potential ecological risk.*

Response: Concur. The text in paragraph 3 of Section 4.7.4.2 will be revised to state that the potential ecological risks from cyanide are uncertain. This uncertainty is already conservatively reflected in subsequent text (paragraph 4 of Section 4.7.4.2) which states that COPC concentrations in sediment suggest potential risks for cyanide. The potential ecological risks of cyanide and other sediment COPCs are then evaluated in subsequent text.

Comment 27:

Chapter 5, Page 5-15, Section 5.4.1, Paragraph 1. *It is unclear as to whether or not subsurface soil samples, collected from the "border" of an area which has since been excavated, were collected within this area. The text states that "all subsurface samples were taken near the southwest corner of the area that was later excavated." Figure 5-6 on Page 5-19 indicates that several of the subsurface soil sample locations were on the border of the area that was excavated. Given these facts, additional text is needed in Section 5.4.1 to explain why sample results from the border of the excavated area will be used in the risk assessment when the soil from which the samples were collected may have been removed from the site during the excavation. The text also states that the "samples were taken at a depth of 1 foot." The last paragraph in Section 5.2.1 on Page 5-3 states that soil was excavated to a depth of 3 to 18 inches. This depth discrepancy should be clarified.*

Response: Section 3.1.3.2 of Appendix C states that "soil or sediment samples collected prior to an excavation, in area that was later excavated, were excluded." To the best of our knowledge, based on reports and maps from previous investigations, no soil or sediment samples from locations that were later excavated were included in the data set. Samples identified as being from the "border" of an excavated area refer to those collected from locations at the edges of an excavated area. These samples were included in the data set. Since the maps being used are not exact (the areas and features depicted from one investigation to another often differ slightly, scales change, etc.), it is impossible to confirm with

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certainty that these sample locations were not actually excavated. However it is conservative to leave these samples in the data set.

The text will be changed to clarify that the subsurface samples in question at IR 1 were taken from the interval starting at 1 foot below the surface. Additionally, the depth of the excavation has been clarified with BEI and thus, page 5-3 will be changed to indicate that soil was excavated to a depth of 12 to 18 inches.

Comment 28:

Chapter 5, Section 5.4.5.5, Page 5-74, Paragraph 2. *The text states that “only four inorganic parameters (antimony, iron, lead, manganese, and selenium) exceeded screening values”, which are five chemicals. The discrepancy should be corrected.*

Response: Concur. The text will be revised to state that five inorganics exceeded screening values.

Comment 29:

Chapter 5, Section 5.5.1, Page 5-79, Paragraph 3. *The text states that “testing for VOC/SVOCs was performed only on a limited number of samples, if at all, in the other media at IR 1.” The adequacy of the available data should be addressed in the text.*

Response: Based on site history, VOCs and SVOCs were not expected to be significant contaminants at IR 1, and the samples that were tested for these compounds do not appear to indicate otherwise.

Comment 30:

Section 5.7.4.2, Pages 5-152 through 5-165. *This section presents a discussion of the results of the ecological risk characterization. Hazard indices (HI) are not presented for site IR 1, although TRVs and HQs were calculated for ecological receptors. HI tables for each ecological receptor at the site should be presented in the document.*

Response: As discussed in Section 5.7.3 of the RFI/RI, foodchain modeling was not performed at IR 1. Terrestrial receptors do not utilize the site to any appreciable extent due to the poor habitat (turfgrass). Modeling of potential risks to piscivorous wading birds and semiaquatic receptors such as the raccoon was not conducted due to the absence of shallow water at the site

Comment 31:

Chapter 6, Section 6.3.1, Page 6-10, Paragraph 2. *The text states that the depth to groundwater “ranged from approximately 3.6 feet to 4.7 feet bls.” This is inconsistent with the groundwater depths presented in Figure 6-3. Appropriate changes should be made.*

Response: The depths presented in the figure are in feet above msl, while the depths presented in the text are in feet bls. In order to avoid this apparent inconsistency, text values will be changed to reflect the values presented in the figure.

Comment 32:

Chapter 6, Section 6.5.1, Page 6-35, Paragraph 2. *The text states that “although pesticide contamination was expected due to the site’s previous use as a DDT mixing area, an inorganic contaminant source cannot be identified based on known site activities.” Many insecticides have historically contained metals, such as arsenic and cadmium. It seems reasonable that insecticides that were mixed at the site may be a potential source of at least some of the inorganic contaminants present. Past pesticide use should be evaluated as a potential source of inorganic contamination.*

Response: Concur. The text will be revised to state that to some extent, metals in soil and groundwater may be due to site related activities.

Comment 33:

Chapter 6, Section 6.6.2.1, Page 6-38, Paragraph 3. *The text states that “no subsurface soil samples were collected at IR 3.” This statement raises doubt as to the adequacy of the site characterization. Additional information regarding the decision to not collect subsurface soil samples should be provided so that the characterization of the site can be evaluated.*

Response: All sampling conducted during 1996 followed the Sampling and Analysis Plan (ABB, 1995), which was approved by USEPA and FDEP. In addition, most of the area believed to have been used for pesticide-mixing operations was excavated to bedrock during interim remediation activities.

Comment 34:

Chapter 6, Section 6.6.4, Page 6-43. *This section presents the potential receptors evaluated at this site. According to this paragraph, the future resident scenario was not evaluated.*

Response: The section in question clearly states that future residents were identified as receptors, and the subsequent text and tables include an assessment of future residents as receptors.

Comment 35:

Chapter 6, Section 6.6.5.1, Page 6-44. *In this section, the phrase “greater than the EPA ‘target risk range’ of 1E-04 and 1E-06” is used to describe a range of values (2E-05 to 3E-06) that does not exceed the target risk range. The text should be changed to indicate that these values are not “greater” than the risk range.*

Response: Concur. The text will be revised as requested.

Comment 36:

Chapter 7, Page 7-17, Figure 7-6. *The figure includes both subsurface and surface soil sample data. However, the surface data which exceeds screening values is not designated clearly. Figure 7-6 should clearly identify the surface soil data which exceeds the screening values.*

Response: Concur. Notes on the figure will be revised to more clearly differentiate surface versus subsurface samples and to clearly identify which samples exceeded screening values.

Comment 37:

Chapter 7, Page 7-31, Section 7.4.3.2, Paragraph 2. *A brief discussion indicating the source of semi-volatile organic compounds (SVOCs) in sediment samples should be provided to more accurately depict the nature and extent of contamination.*

Response: Concur. A brief discussion will be added under Section 7.6.1 (Contaminant Summary and Trends). Given the unknown nature of wastes buried at IR 7, it is uncertain whether SVOC contamination can be linked to previous site activities. However, the infrequent detection of PAHs in sediments suggests that their presence may be due to boat traffic in the area rather than IR 7-related inputs.

Comment 38:

Chapter 7, Page 7-57, Section 7.4.5.2, Paragraph 2. *The text states that “SVOCs were not tested in groundwater in 1996.” However, although SVOCs were previously detected (1990 and 1993 sampling events), there is no explanation as to why they were not tested in groundwater in 1996. It appears that these previously detected SVOCs and their respective concentrations (from 1990 and 1993 sampling events) do not present a risk to human health and the environment. If this is true, then it needs to be further explained.*

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Response: Concur. Section 7.4.5.2 will be revised to state that previous analyses were determined to adequately characterize SVOCs in groundwater at IR 7 and that analyses of SVOCs were not conducted in 1996 groundwater samples as per the approved Sampling and Analysis Plan.

Comment 39:

Chapter 7, Section 7.8, Page 7-154. *The conclusion should include a reference to the need for land use restrictions.*

Response: Concur. Section 7.8 (Conclusions and Recommendations) will be revised to include a recommendation that prevention of a residential scenario for IR 7 be enacted via institutional controls, and as per FDEP comments, a groundwater monitoring program will be developed for the site.

Comment 40:

Chapter 8, Page 8-20, Section 8.4.2, Paragraph 1. *This paragraph states that "surface-soil metals were found near the center of the site, west of the ammunition storage area." However, as depicted in Figure 8-6 on Page 8-17, the only surface soil samples collected were from an area in the center of the site. This would not appear to provide a complete representation of contamination over the entire site. An explanation of the rationale used in determining surface soil sampling locations should be included in this section.*

Response: Samples were collected as per the approved Sampling and Analysis Plan. Soil samples were generally collected from an area in the center of the site, while sediment samples were collected around the edges. In the 1990 Preliminary RI, IT analyzed 10 soil samples from throughout the site for EP Toxicity. EP toxicity data is not in a form that is comparable to the rest of the solid media data, so was not included in the data set for the Supplemental RFI/RI. However, the tests did not indicate any significant areas of soil contamination. Also, available information indicates that investigations installing monitoring wells screened all soil borings with an OVA. No significant quantities of organic vapors were detected.

Comment 41:

Chapter 9, Page 9-42, Section 9.4.4, Paragraph 3. *The grab samples collected from a borehole in 1993 exhibited numerous metals above the screening values, while the monitoring well samples collected at the same site in 1996 indicated thallium as the only inorganic contaminant above screening levels. The text should examine the possible link between the groundwater sample collection techniques employed in 1993 and 1996 and the differences in inorganic concentrations instead of stating only that "Groundwater contamination beneath the site is predominantly attributable to metals."*

Response: Concur. The statement that groundwater contamination is “predominantly attributed to metals” will be modified, as this is not true for 1996 data. Metals were the predominant contaminants in 1993 groundwater samples, however, as indicated on Figures 9-5, 9-10, and 9-11, these were groundwater grab samples collected from boreholes. This sampling method could potentially result in high turbidities that might artificially elevate metals concentrations (See the response to General Comment 2).

Comment 42:

Section 9.7.1.4, Page 9-108. *This section discusses the selection of COPCs for site AOC B. The text states that iron was excluded in all media but surface water because it is an essential nutrient that is toxic in extremely high concentrations. While this may be true, iron concentrations [116,000 milligrams per kilogram (mg/kg)] were found in sediment well in excess of ecological threshold values for sediment (20,000 mg/kg, Hull and Suter 1994). Iron should be included as a sediment COPC and the risk assessment should be revised.*

Response: Concur. The ecological risk assessment of AOC B will be revised to include an evaluation of iron in all media.

Comment 43:

Section 9.7.4.2, Page 9-129, Paragraph 2. *This paragraph discusses metal concentrations in fish collected from AOC B. The text states that arsenic, manganese, and zinc were detected in tarpon at the site, but the average concentration of zinc in tarpon at AOC B was approximately half the average concentration in background minnows. Although this statement is true, this comparison should not be made. The zinc concentrations in site minnows are two times that of the zinc concentrations in tarpon. Based on this, minnows and tarpon may not accumulate zinc at the same rate. Therefore, a comparison of tarpons to background minnows is not justified. Site tarpon zinc concentrations should not be compared to background minnow concentrations.*

Response: Concur. As mentioned in the text, no tarpon were collected from background sites, and therefore, comparisons to background tarpon could not be made. The comparison to minnows was made only as a qualitative, loose comparison since no directly comparable data were available. However, the Navy concurs with the main idea expressed in the reviewer’s comment. Therefore, the text will be revised to discuss a comparison of tarpon to background fish in general.

Comment 44:

Section 9.8, Page 9-133, Paragraph 4. *This paragraph discusses the potential ecological risk to ecological receptors at site AOC B. The text states that surface water and sediment contaminants have*

not accumulated in fish and crabs. According to the data presented in Table 9-28 and 9-29, chlorobenzilate, an organochlorine compound, was detected in fish and crab tissue at concentrations as high as 74 and 140 micrograms per liter (µg/L), respectively. Other organochlorine compounds were detected in tissue as well. This statement is incorrect and should not be used to justify lack of potential ecological risk. This statement should be omitted from the text.

Response: The statement in question is taken from the “Conclusions” section of the chapter, and thus, must be viewed in light of information presented in Section 9.7.4.2, which discusses the results of tissue analyses. As shown in Tables 9-28 and 9-29, and discussed in Section 9.7.4.2, several organochlorine pesticide compounds were detected in fish and crab tissue from AOC B, but these compounds do not appear to be elevated relative to tissues collected from background sites.

The average concentration of chlorobenzilate in blue crabs (56.9 mg/kg) exceeded the average value for background crabs (23.5 mg/kg), but the maximum concentration of chlorobenzilate in blue crabs (140 mg/kg) was the same as the maximum concentration in background crabs. Chlorobenzilate in other tissues (fish and mud crabs) from AOC B do not appear to be elevated relative to background tissues. None of the maximum or average concentrations of the organochlorine compounds detected in fish or crabs exceeded concentrations presented in Table C.3-21 as protective of fish or piscivorous wildlife. Furthermore, as discussed in the text, a general threshold for effects on aquatic organisms from organics is 100 ug/kg. No organics other than chlorobenzilate exceeded this value in fish and crabs. The maximum value of chlorobenzilate in fish (74 mg/kg) did not exceed this level, and the maximum value in blue crabs (140 mg/kg) did not substantially exceed this level. The average in blue crabs (56.9 mg/kg) was considerably lower than 100 ug/kg. No organics other than chlorobenzilate exceeded this value in fish and crabs. The “conclusion” statement in question, thus, is supported by the data as discussed in the RFI/RI.

Comment 45:

Chapter 9, Section 9.8, Page 9-133. *The conclusion should include a reference to the need for land use restrictions.*

Response: Concur. Section 9.8 (Conclusions and Recommendations) will be revised to include a recommendation that a future residential scenario be prevented at AOC B via institutional controls.

Comment 46:

Appendix B, Part 4. *Appendix B of the document contains TRV, HQ, and HI calculations for SWMU 4 only. Although the text of the ecological risk assessment sections for each site states that calculations for*

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each site were provided in Appendix B, only SWMU 4 calculations were provided. All calculations for each site should be provided in Appendix B.

The TRV column in the HQ/Hi tables is labeled "NOAEL." This column should be labeled "TRV."

Units are not provided in the "Predicted concentration" column in the dose calculations tables. Units should be provided for this column.

BAF calculations are not provided, although the text discusses BAF calculations for raccoon food chain modeling. All calculations should be referenced in the text and provided in Appendix B with the other food chain modeling calculations.

Response Para 1: See response to General Comment 6.

Response Para 2: Concur. The column labeled as NOAEL will be changed to TRV.

Response Para 3: Units are provided at the top of the initial tables in question.

Response Para 3: BAFs are provided on page 2 of the raccoon tables.

Comment 47:

Appendix C, Section 3.3.1.1.5, Pages C-127 through C-128. *This section discusses the selection of assessment and measurement endpoints identified for the ecological risk assessment. A table identifying ecological receptors, ecological niche, and assessment and measurement endpoints for each site should be included in this section.*

Response: A table seems unnecessary since these items are adequately described in the text. Ecological receptors at each site are discussed in the "Habitat Types and Ecological Receptors" section of each ERA, and receptors used in the foodchain model are discussed in the "Ecological Effects Characterization" section of each ERA. Ecological niches are discussed in Section 3.3.2.1.2 of Appendix C.

Comment 48:

Appendix C, Section 3.3.1.2.1, Page C-129, Paragraph 2. *This section describes the selection of surface water thresholds. The text states that there is no surface freshwater at sites other than SWMU 4. The text does not mention the two freshwater ponds at SWMU 7. The text should include the ponds at SWMU 7 in this section.*

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Response: The ponds at SWMU 7 are slightly saline (salinity = 1.7 to 18.2 ppt) as discussed on page 4-94 of the RFI/RI report.

Comment 49:

Appendix C, Table C.3-20, Sediment Threshold Values, Page C-133. *This table provides sediment benchmark values used in the ecological risk assessment. The sediment benchmark values for 4,4-DDD, 4,4-DDE, and 4,4-DDT are reported in the document as 3.3 µg/kg (EPA Region IV Screening Value), 1.22 µg/kg (FDEP 1995), and 2.07 µg/kg (FDEP 1994), respectively. The 4,4'-DDE and 4,4-DDT values are incorrect, and should be replaced with 2.07 µg/kg (FDEP 1994) and 1.19 µg/kg (FDEP 1994), respectively. All the values in the table should be verified.*

Response: Concur. The sediment benchmarks for 4,4'-DDE and 4,4'-DDT are incorrect and will be changed. As requested, all values in the table will be verified. Applicable portions of the risk assessment for each site will be revised as necessary. Also, see response to General Comment 5.

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REFERENCES

ABB (ABB Environmental Services, Inc.), 1995. *Facility and Remedial Investigation NAS Key West, Workplan - Volume 1 and Sampling and Analysis Plan - Volume 2*, prepared for SOUTHNAVFACENGCOM, Tampa, Florida, June.

IT Corporation, 1994. *RCRA Facility Investigation/Remedial Investigation, Final Report, NAS Key West, Key West, Florida*, prepared for SOUTHNAVFACENGCOM, Tampa, Florida, June.

Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder, 1995. "Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments," *Environmental Management*, 19:81-97.

EPA (U.S. Environmental Protection Agency), 1996. "ECO Update," EPA 540/F-95/038, Office of Solid Waste and Emergency Response.

FDEP (Florida Department of Environmental Protection), 1994. *Approach to the Assessment of Sediment Quality in Florida Coastal Waters: Volume 1 - Development and Evaluation of Sediment Quality Assessment Guidelines*, Tallahassee, Florida.

Wellman, L. (U.S. Environmental Protection Agency), 1997. Personal communication with M. L. Whitten, Brown and Root Environmental, Aiken, South Carolina, April 16.

Wolfe, S. (Florida Department of Environmental Protection), 1997. E-mail to M. L. Whitten, Brown and Root Environmental, Aiken, South Carolina, April 9.

**DRAFT SUPPLEMENTAL RCRA FACILITY INVESTIGATION AND REMEDIAL
INVESTIGATION REPORT FOR
NAVAL AIR STATION (NAS) KEY WEST EIGHT SITES**

**RESPONSE TO COMMENTS FROM
JORGE CASPARY, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

GENERAL COMMENTS

Comment 1:

The document refers extensively to EPA's 1E-04 to 1E-06 target cancer risk range. Please note that the FDEP acceptable excess lifetime cancer risk is 1E-06 for the sites covered by the report. Some sites' conclusions may have to be modified to account for this fact.

Response: Concur. The text will be revised wherever a reference is made to EPA's target risk range, so that an additional reference to FDEP's 1E-06 target risk will be included.

Comment 2:

As discussed, please note that the Department as a pre-Risk Assessment screening step compares the site's groundwater values to departmental Groundwater Guidance Concentrations to develop COPCs for consideration in the risk calculations. Likewise, in order to receive an unrestricted No Further Action, note that all wells at a site must comply with the State's Groundwater Standards and Minimum Criteria.

Response: Comment noted. Based on discussions during the 11 September 97 meeting, the Navy understands that FDEP prefers for tables to be included that provide the average of only those detections that exceed MCLs or appropriate ARARs for a given chemical. Future reports will comply with this request.

SITE SPECIFIC COMMENTS

Comment 1:

SWMU 4

I concur with the proposal of No Further Action for this site.

Response: Comment Noted.

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Comment 2:

SWMU 5

I concur with the proposal for a CMS for this site.

Response: Comment Noted.

Comment 3:

SWMU 7

I concur with the proposal for a CMS for this site.

Response: Comment Noted.

Comment 4:

IR-1

I concur with the recommended course of action to conduct toxicity tests on benthic species; however, I recommend such tests not be part of an engineering document such as the Feasibility Study. I am willing to explore, at our next partnering meeting, the proper CERCLA procedural step to conduct toxicity tests.

Response: Concur. A technical memorandum is being prepared for the proposed sediment toxicity testing at IR 1. Dr. Steven Wolfe of FDEP will be consulted during preparation of the technical memorandum for advice on the design of the toxicity testing. The activities associated with toxicity testing and reporting will be considered part of a focused study.

Comment 5:

IR-3

The amount of soil contamination remaining post excavation is very marginal and I believe this minimal contamination does not merit the preparation of a Feasibility Study. I propose the team explore the presumptive alternative of groundwater monitoring with institutional controls of the asphalt/concrete cap at our next partnering meeting.

Response: Concur. The partnering team agreed (30 September 97) that a presumptive remedy is the appropriate action for site IR 3. The Navy is currently taking steps to prepare a proposed plan that incorporates capping as the final remedy.

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Comment 8:

IR-7

An unrestricted No Further Action is not acceptable. I recommend that monitoring of groundwater wells located next to surface water and prevention of a residential scenario via institutional controls be explored as the course of action.

Response: Concur. The Navy will develop a groundwater monitoring program for IR 7.

Comment 7:

IR-8

I concur with the recommended course of action to conduct toxicity tests on benthic species; however, I recommend such tests not be part of an engineering document such as the Feasibility Study. I am willing to explore, at our next partnering meeting, the proper CERCLA procedural step to conduct toxicity tests.

Response: Concur. A technical memorandum is being prepared for the proposed sediment toxicity testing at IR 8. Dr. Steven Wolfe of FDEP will be consulted during preparation of the technical memorandum for advice on the design of the toxicity testing. The activities associated with toxicity testing and reporting will be considered part of a focused study.

Comment 8:

AOC B

The No Further Action proposal is acceptable provided that prevention of a residential scenario via institutional controls is enacted.

Response: Concur.